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No. 6935

RANKING ISRAEL'S ECONOMISTS

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August 2008

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CEPR Discussion Paper No. 6935

August 2008

ABSTRACT

Ranking Israel's Economists*

One of the more important measures of a scholar's research impact is the number of times that the scholar's work is cited by other researchers as a source of knowledge. This paper conducts a first of its kind examination on Israel's academic economists and economics departments, ranking them according to the number of citations on their work. It also provides a vista into one of the primary reasons given by junior Israeli economists for an unparalleled brain drain from the country - discrepancies between research impact and promotion.

The type of examination carried out in this paper can now be easily replicated in other fields and in other countries utilizing freely-available citations data and compilation software that have been made readily accessible in recent years.

JEL Classification: A1, H83 and I23

Keywords: academic economists, Israel and rankings

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* I would like to thank Omer Moav and Arik Tamir for their comments and to Yuval Erez for his research assistance.

Submitted 06 August 2008

1. Introduction

Why rank economists and economics departments? In an age of increasing transparency in each field, the issue of quality measures receives a central role. Not only should economists and economics departments be examined periodically, so must all of the senior faculty and all of the departments in other fields undergo regular quality reviews in order to gauge the degree of correlation between actual impact and budgetary allocations, promotions, and so on. For top students contemplating where to continue their studies and with whom, information on the quality of research and instructional faculty is paramount.

Therefore, the rankings done here are just a part of a much larger picture that must be taken of Israel's system of higher education. These rankings are partial, not only because they do not cover other fields, but also because they do not enter the realm of teaching due to a lack of published data on teaching evaluations conducted by the universities.

Another reason for focusing on a quantifiable measure of research quality in Israel is the existence of an unequaled academic brain drain from its universities. A country that was ranked above all others outside the U.S. between 1971 and 2000 in terms of publication in blue-ribbon economics journals (Combes and Linnemer, 2002) has experienced a major hemorrhaging in the field of economics. Tel-Aviv University, which was ranked alongside Princeton in terms of citations per faculty member in the nineties has experienced a severe depletion in its ranks, as have the other leading departments (Ben-David, 2007). The number of Israeli scholars in just the top 40 American economics departments equals 29% of all those remaining in Israel's economics departments (Ben-David, 2008). One of the primary reasons given by the younger economists is the sense that there exist some considerable discrepancies between research quality and subsequent academic promotion within Israel. This paper provides a portal into this issue – and in so doing, provides a look at some relatively new, freely available, tools that have recently become available which can enable similar examinations in other countries and in other fields.

How can research quality be examined? To a large degree, this is a Pandora's box. The role of research universities is not just to create students with professional knowledge or

research that can be readily adaptable tomorrow in the marketplace. The more basic the research, the greater the need for more professional assessment.

The number of articles accepted to professional journals is possibly an indication of a researcher's energy level – but, as in other areas, quantity is no substitute for quality. A common way to measure quality is an examination of the number of articles accepted to “blue ribbon” journals.

How is the quality level of a journal determined? The most frequent criteria (see, for example, Kodrzycki and Yu, 2006, and Liebowitz and Palmer, 1984) is the number of citations received by the articles that it publishes.

But, in light of the fact that the acceptance process of an article to a journal generally involves one editor and a very limited number of referees, than mistakes can often be made when articles with only a minor contribution can get accepted while articles with a major contribution may be rejected. This is due to the inability of even the most senior individuals in the field to conclusively determine what will eventually turn out to be an important contribution and what won't after publication. The most accurate way to examine an article's contribution is by the number of times that future research cites the article as a source of relevant information.

In other words, the best way to examine scientific impact is to allow the entire discipline do the judging. Just as the quality of a journal is determined, the use of citations can be adopted to determine the quality of an individual research paper.

For a number of years, the Research Assessment Exercise (RAE) has been carried out to evaluate research in UK universities. The quality of research in various departments and research groups is measured by panels of experts in the relevant fields. Smith and Eysenck (2002) found a high correlation between RAE grades and the number of citations received by a faculty member. Their findings led Smith and Eysenck to the conclusion that the usage of citations for measuring research quality is both cheaper and also more transparent than the RAE method, while generating very similar results.

The use of citations for measuring research quality is not bias-free. Sometimes, a person's accumulated reputation facilitates the acceptance of his/her work in a widely disseminated journal. Similarly, prominent researchers often belong to prestigious research centers that provide widely read

platforms for research work. That said, it is also possible to state the opposite: it is not usually a coincidence that a researcher reaches a position of prominence which enables the publication of his/her articles and papers in influential outlets.

The time dimension represents another problem with using citations for determining research quality. It is only natural that it takes a while until the citing articles get published some time in the future. Therefore, it is not possible to gauge the true impact of a paper immediately upon its publication, but only after a sufficient amount of time has elapsed.

This means that the ranking of economists according to the number of citations received by their articles is biased towards the most senior researchers who have had papers published sufficiently long ago to have had an adequate “shelf life”. The more junior scholars have fewer published papers – if at all – that have been on the shelf a shorter period of time.

Therefore, in the personal rankings that follow, Israel's four academic ranks will be separated into two groups. The first will be referred to as professors (those holding the ranks of associate and full professors) while the second group will be denoted doctors (those with the ranks of lecturer and senior lecturer) in order to allow for some delineation in the impact between the two groups (though such a distinction is not perfect, as will be highlighted in a number of extraordinary cases in the following analysis).

2. Methodology

This paper focuses on all of the economists in Israel's research universities over the entire span of their careers. The names of the economists and their academic ranks were taken from the websites of all the universities' economics departments as well as from a number of additional departments in which economists hold positions. The list includes those who are members of economics departments or whose primary research is in sub-fields that are researched by a large number of economists in economics departments.

In most cases, the department websites continue to include the names of those who have retired, whether or not this fact is explicitly stated. The rankings of the economists here

will include everyone, with a special marking for those who have retired but continue to appear on the websites.

The traditional source for citations is Thomson Scientific Web of Science (WoS).¹ But the search there is by family name plus the first letter of the first name only, which considerably increases the risk of identification errors when more than one researcher fits the same personal details. In November 2004, the beta version of Google Scholar (GS) was launched, a service that enables a more accurate examination of researchers. In GS, it is possible to list a researcher's full name and limit the search just to the relevant research fields.

What is the difference between citations in WoS and GS? The former focuses just on refereed journals. Technological changes in recent years facilitate scientific discourse through new, electronic, channels. Papers and reports are accessible to all via the internet. Similarly, new e-journals have been created that are readily available. As research by Bauer and Bakkalbasi (2005) indicates, in the new reality of the present age, WoS misses a substantial part of the new research activity that is covered by GS. One could add that a very comprehensive examination of citations via WoS requires some expensive tools that are unnecessary when working with GS.

According to Harzing (2007), "The major disadvantage of the WoS is that it may provide a substantial underestimation of an individual academic's actual citation impact." There are large differences in the number of citations for nearly every researcher. For example, Nisonger (2004) found that WoS shows just 29% of his total citations, 42% of his printed citations, 20% of his citations outside the United States and just 2% of the citations that are not in English, an important dimension when the focus is on international impact. Nisonger summarizes additional papers that also find that the WoS citation data is incomplete.

Harzing adds "GS presents a more complete picture of an academic's impact than the Thomson ISI WoS." She recommends the following rule of thumb for utilizing citation search services: "If an academic shows good citation metrics, it is very likely that he or she

¹ In the past, this used to be called Institute of Scientific Information Web of Science (ISI).

has made a significant impact on the field. However, the reverse is not necessarily true. If an academic shows weak citation metrics, this may be caused a lack of impact on the field. However, it may also be caused by working in a small field, publishing in a language other than English (LOTE), or publishing mainly (in) books.”

Meho and Yang (2006) conducted a large-scale comparison between WoS, Scopus (Elsevier's alternative to WoS) and GS. They find little overlap in citations between the three citation databases. This is because GS finds more than twice as many citations as WoS and Scopus. Many of these additional citations come from working papers, doctoral dissertations, books and book chapters.

That said, Meho and Yang (2006) and Saad (2006) find very high correlation coefficients between researcher *rankings* via GS and via WoS. Della Seta and Cammarano (2006) also compare between WoS and GS and find that GS is an important tool for measuring citations that yields a similar and complementary picture to that given by WoS.

The high degree of correlation between GS and WoS is exhibited not only in the researcher rankings. There is also a high correlation between both databases in the relative impact of individual articles written by a particular researcher. Take, for example, articles written by the author of this paper. The total number of citations received over the life of each article – from its beginnings as a working paper until its final publication in a journal – were tallied. This makes it possible to determine the weight of each paper's citations in relation to the total number of cites received by all papers by a given author. In the case of this paper's author, the correlation coefficient between the relative weight (out of the total number of citations) of each paper in GS and the relative weight of the same paper in WoS is 0.97.

A final note before examination of the rankings. The high correlation between WoS and GS in the rankings indicates that the relative placement in the following rankings is relatively accurate, though too much importance should not be placed on the exact ranking (i.e. the rank of n rather than $n-1$).

3. Rankings

Moshe Kaveh, president of Israel's Bar Ilan University and head of the university presidents' council in Israel, signaled the general direction that an analysis of rankings should take (Kaveh, 2007). Among other things, Kaveh writes about the need to normalize the research output by the number of people who contributed to the output.

This paper continues along that vein. Suppose that a particular researcher is the sole author of article *A* that was cited X times and is one of three authors of article *B* that was cited Y times. Hence, this researcher's "total citations" are $X+Y$ while the researcher's "weighted number of citations" is $X+Y/3$. When a number of researchers contribute to the success of a paper, then the weighted number of citations gives a rough approximation of the relative impact of each researcher in the joint work. Therefore, the numbers that will be used here are the "weighted number of cites." For completeness, all of the tables ranking economists appear once again in the appendix with rankings according to "total citations."

As noted above, the list of academic economists was compiled from the senior faculty lists that appear on the websites of each department in which there are economists in all of Israel's research universities. Harzing's Publish or Perish program, which retrieves academic citations from Google Scholar and summarizes them for each scholar, was used for the analysis.² In order to reduce the chance of hitting upon a number of academics with the same name, the search was limited to the following fields: social sciences, arts and humanities, economics, business, administration and finance. In specific cases, the fields of mathematics, engineering and computer science were also added.

3.a. Comparison of the Economists

There are 191 economists among the senior faculty in Israel's universities. Of these, 134 are at the rank of professor (either full or associate professor), 56 are at the rank of doctor

² Other papers that have also made recent use of the Publish or Perish program in citation analysis are Clark (2008) and Keloharju (2008).

(senior lecturer or lecturer) and one is without a PhD.³ A ranking of the top one-third of Israel's economists appears in table 1.⁴

The average number of citations per faculty member is 349. That number is high, above 74% of all the economists, because of the extraordinary number of citations received by the economists at the head of the list. In the event of an upward bias of this magnitude, the median number of citations, 115, provides another important dimension.

When the focus is only on the more senior faculty, those with the rank of professor, the median number of citations is 196. If one expects academic rank to reflect research excellence, then it is not surprising that most of the professors are in the higher ranks while most of the doctors are among the lower ranks.

But the relationship between academic promotion and research impact (as reflected in the number of citations received on research papers) is not as high as might be expected. This raises some questions about the way that academic economists are promoted in Israel.

40% of the economists in the bottom third of the ranking are professors. Above them, in the middle third of the ranking, 27% of the economists are only at the rank of doctor. In the top third of the ranking (which appears in table 1), there two doctors with more citations than 73% of the economics professors in Israel – and more than the median number of citations received by the full professors in the country's top two economics departments.

3.b. Comparison of the Economics Departments

How do the economics departments compare to one another? Actually, in addition to the economics departments, there are a few more departments in Israel's universities with at least three economists in each: the mathematics departments in Tel-Aviv and Hebrew Universities, the faculty of industrial engineering and management in the Technion, the faculty of management and the department of public policy at Tel-Aviv University.

³ These websites only distinguish between professors and doctors. They do not go into the finer resolution of associate versus full professor nor lecturer versus senior lecturer. The departments were reluctant to release that information, hence the analysis here distinguishes only between professors and doctors.

⁴ The complete list is available upon request.

Table 1: **Ranking the Top Third of the 191 Academic Economists
in Israeli Universities**

Total cites per author, 2007

115 = median of all 191 economists
196 = median of all 134 professors

rank	cites	name	university-department	
1	9,033	Prof Elhanan Helpman	Tel-Aviv - Economics	emeritus
2	4,447	Prof Robert Aumann	Heb Univ - Math	emeritus
3	4,045	Prof Ariel Rubinstein	Tel-Aviv - Economics	
4	2,570	Prof Alex Cukierman	Tel-Aviv - Economics	emeritus
5	2,400	Prof David Schmeidler	Tel-Aviv - Business, Math	
6	2,247	Prof Manuel Trajtenberg	Tel-Aviv - Economics	
7	1,427	Prof Assaf Razin	Tel-Aviv - Economics	
8	1,424	Prof. Menahem Yaari	Heb Univ - Economics	emeritus
9	1,338	Prof Shlomo Yitzhaki	Heb Univ - Economics	
10	1,213	Prof Itzhak Gilboa	Tel-Aviv - Economics	
11	1,032	Prof Arye Hillman	Bar-Ilan - Economics	
12	971	Prof Oz Shy	Haifa - Economics	
13	968	Prof Yoram Weiss	Tel-Aviv - Economics	
14	963	Prof. Reuben Gronau	Heb Univ - Economics	emeritus
15	925	Prof Sergiu Hart	Heb Univ - Econ, Math	
16	918	Prof Yair Mundlak	Faculta - Agric Econ	emeritus
17	887	Dr Dan Ben-David	Tel-Aviv - Public Policy	
18	879	Prof Ido Erev	Technion - Ind Eng & Manag	
19	794	Prof Moshe Tennenholtz	Technion - Ind Eng & Manag	
20	765	Prof Chaim Fershtman	Tel-Aviv - Economics	
21	762	Prof Shmuel Nitzan	Bar-Ilan - Economics	
22	738	Prof Joseph Zeira	Heb Univ - Economics	
23	737	Prof. Bezalel Peleg	Heb Univ - Math	emeritus
24	733	Prof Victor Lavy	Heb Univ - Economics	
25	695	Prof. Eytan Sheshinski	Heb Univ - Economics	emeritus
26	644	Prof Neil Gandal	Tel-Aviv - Public Policy	
27	630	Prof Zvi Eckstein	Tel-Aviv - Economics	
28	628	Prof Leonardo Leiderman	Tel-Aviv - Economics	
29	616	Prof Saul Lach	Heb Univ - Economics	
30	604	Prof Efraim Sadka	Tel-Aviv - Economics	
31	589	Prof Daniel Tsiddon	Tel-Aviv - Economics	
32	589	Prof Eugene Kandel	Heb Univ - Econ, Business	
33	552	Prof Zvi Hercowitz	Tel-Aviv - Economics	
34	533	Prof Eddie Dekel	Tel-Aviv - Economics	
35	504	Prof Israel Zang	Tel-Aviv - Bus School	emeritus
36	490	Prof Dov Samet	Tel-Aviv - Bus School	
37	441	Prof Ehud Lehrer	Tel-Aviv - Math	
38	435	Dr. Yishay Yafeh	Heb Univ - Bus School	
39	425	Prof Omer Moav	Heb Univ - Economics	
40	415	Prof. Michael Michaely	Heb Univ - Economics	emeritus
41	412	Prof. Dov Monderer	Technion - Ind Eng & Manag	
42	390	Prof Motty Perry	Heb Univ - Economics	
43	374	Prof. Giora Hanoch	Heb Univ - Economics	emeritus
44	368	Prof. David Levhari	Heb Univ - Economics	emeritus
45	362	Prof David Genesove	Heb Univ - Economics	
46	359	Prof Samuel Hollander	BGU - Economics	emeritus
47	359	Prof Mark Gradstein	BGU - Economics	
48	355	Prof. Abraham Neyman	Heb Univ - Math	
49	354	Prof Itzhak Zilcha	Tel-Aviv - Economics	
50	352	Prof Jacques Silber	Bar-Ilan - Economics	
51	327	Prof. Adrian Ziderman	Bar-Ilan - Economics	emeritus
52	319	Prof Zvi Lerman	Faculta - Agric Econ	
53	319	Prof Michael Maschler	Heb Univ - Math	emeritus
54	306	Prof Morris Teubal	Heb Univ - Economics	
55	304	Prof. Jacob Paroush	Bar-Ilan - Economics	emeritus
56	290	Prof Uriel Rothblum	Technion - Ind Eng & Manag	
57	271	Prof Eyal Winter	Heb Univ - Economics	
58	254	Prof Jacob Glazer	Tel-Aviv - Bus School	
59	253	Prof Joram Mayshar	Heb Univ - Economics	
60	248	Prof Ayal Kimhi	Faculta - Agric Econ	
61	239	Prof Daniel Levy	Bar-Ilan - Economics	
62	235	Prof Avishay Braverman	BGU - Economics	
63	227	Prof Michael Beenstock	Heb Univ - Economics	
64	225	Prof Elchanan Ben-Porath	Heb Univ - Economics	

Table 2 compares the total number of citations received by each department, an indication of the overall research impact of each department relative to the others. When an economist has half a position in department A and half a position in department B, his citations are divided between the two departments according to the share of position that he holds in each, in order to prevent double counting. Use of total citations rather than the weighted citations measure may also lead to double counting in the case of joint work by two or more members of the same department. Hence, as noted above, the measure used here is the weighted measure. Once again however, for completeness, all of the departmental rankings appear again in the appendix according to total citations rather than weighted ones.

In Israel, there are five economics departments. The two with the most impact are at Tel-Aviv University and the Hebrew University, with the former in first place and the latter in second place. While there are roughly the same number of faculty members in each, the number of citations at Tel-Aviv is 2.1 times the number at Hebrew University.

The number of citations received by Hebrew University is 1.8 times the number received by the third place department at Bar-Ilan University – and the latter have 1.8 and 1.9 times the numbers of citations as the two remaining economics departments, the ones at Ben-Gurion and Haifa Universities, respectively.

Table 2

Ranking Departments by Total Cites, 2007*

Rank		Number of academic positions**		Citations***	
	Entire country****	140.0	(181.8)	40,655	(65,927)
1	Economics – Tel-Aviv University	18.0	(26.0)	15,033	(26,835)
2	Economics – Hebrew University	21.0	(36.0)	7,141	(12,149)
3	Economics – Bar-Ilan University	29.0	(33.8)	4,040	(4,615)
4	Management – Tel-Aviv University	7.5	(9.5)	2,472	(3,172)
5	Industrial Engineering and Management – Technion	8.0		2,511	
6	Economics – Ben-Gurion University	25.0	(28.0)	2,206	(2,613)
7	Economics – Haifa University	17.0	(19.0)	2,107	(2,249)
8	Mathematics – Tel-Aviv University	2.5		1,742	
9	Public Policy – Tel-Aviv University	3.0		1,663	
10	Agricultural Economics – Hebrew University	7.5	(11.5)	921	(2,056)
11	Mathematics – Hebrew University	1.5	(4.5)	818	(6,321)

* The numbers in parentheses include emeritus faculty.

** Total number of positions in each department.

*** According to weighted cites per author.

**** Only departments with more than two economists

A more accurate way to gauge relative research quality in the departments is to convert the measures in terms of faculty members. As is possible to see in table 3, the economics department at Tel-Aviv is in first place here too, with 835 citations on average for each economist. In second place is the mathematics department at Tel-Aviv, with 697 cites per researcher. In third place is the department of public policy at Tel-Aviv, with 554 citations per economist.

One additional feature of the rankings that can be seen in the tables: the situation with and without the emeritus faculty members. The number of average citations per faculty member in Tel-Aviv's economics department fell by 19% when the emeritus faculty were excluded (table 3). At Hebrew, Bar-Ilan, Haifa and Ben-Gurion Universities, the number of citations per faculty member barely changed. The agricultural economics department of the Hebrew University experienced a drop of 31% while the mathematics department at the same university had a drop of 61% in citations per faculty member.

Table 3

Ranking Departments by Cites Per Faculty Member, 2007*

Rank		Number of academic positions**		Citations***	
	Entire country****	140.0	(181.8)	290	(363)
1	Economics – Tel-Aviv University	18.0	(26.0)	835	(1,032)
2	Mathematics – Tel-Aviv University	2.5		697	
3	Public Policy – Tel-Aviv University	3.0		554	
4	Mathematics – Hebrew University	1.5	(4.5)	545	(1,405)
5	Economics – Hebrew University	21.0	(36.0)	340	(337)
6	Management – Tel-Aviv University	7.5	(9.5)	330	(334)
7	Industrial Engineering and Management – Technion	8.0		314	
8	Economics – Bar-Ilan University	29.0	(33.8)	139	(137)
9	Economics – Haifa University	17.0	(19.0)	124	(118)
10	Agricultural Economics – Hebrew University	7.5	(11.5)	123	(179)
11	Economics – Ben-Gurion University	25.0	(28.0)	88	(93)

* The numbers in parentheses include emeritus faculty.

** Total number of positions in each department.

*** According to weighted cites per author.

**** Only departments with more than two economists

4. On the Changes in Quality

Does the reduction in the average number of citations per faculty member indicate a parallel drop in research quality? Not necessarily. A large part of this reduction can be explained by a natural process of the changing of the guard, as senior economists with many citations retire and younger economists with fewer citations replace them. Particularly notable examples are Nobel Laureate Robert Aumann (from the mathematics departments at the Hebrew University), Elhanan Helpman (early retirement from the economics department at Tel-Aviv University and, today, a professor at Harvard) and Yair Mundlak (from the Hebrew University's department of agricultural economics).

A comparison of departmental averages that includes emeritus professors – but excludes these three – as opposed to departmental averages that exclude emeritus professors, reveals an increase in citations per faculty member in each of the three departments when the retired professors are excluded. On the other hand, when the focus is on changes in research quality, then it is possible to ask whether there are currently any other economists of the caliber of these three who are currently developing in the departments from which they recently retired?

As noted in Ben-David (2007), retirement – early, or otherwise – is just one of the reasons that economists have left the departments. Some of those who continue to remain department members have opted to do so only partially. Of these, several are fully employed in non-academic positions in Israel while others have simultaneous appointments abroad that keep them away for substantial periods each year. As a result, these informal arrangements cause the non-emeritus citation averages in table 3 to be biased upwards in some instances. At the department of economics in Tel-Aviv University, for example, the citation averages would be lower had they excluded those faculty members who have positions outside the university.

Two other reasons cited in Ben-David (2007) for the depletion of Israel's economics departments are (a) large and growing salary differences between the United States and Israel, and (b) discrepancies between promotion and research quality. While discussion of

the former is outside the scope of this paper, evidence with regard to the latter that has been provided above is corroborated by findings in Coupé (2003). He ranked the economists with the greatest research impact in the nineties according to academic citations on articles written during the years 1990-2000. Coupé's rankings were based on the Econlit database, which includes all of the journals in the field of economics, combined with the Thomson Scientific Web of Science citations database. Of the 13 Israeli-based economists ranked among the top 1000 in the world in the nineties, some have still – nearly a decade later – not been promoted to the rank of full professor in Israel's universities.

5. Summary

This paper provides a comparison of all 191 academic economists in Israel on the basis of their research impact, as reflected by citations on their work. Their academic departments were similarly ranked.

The top-ranked department in the country is the department of economics at Tel-Aviv University. In second place is the economics department at the Hebrew University and in third place is the economics department at Bar-Ilan University. When the comparison is made in terms of citations per faculty member, then in the first three places are the following departments in Tel-Aviv University: economics, mathematics and public policy.

In general, there is a link between a researcher's academic rank and the number of citations that the researcher's work received. But there are also some non-negligible discrepancies in the promotion considerations of various researchers. This leads to the finding that a large number of individuals not promoted beyond the rank of doctor find themselves with considerably more citations than others at the rank of professor.

While other considerations certainly play a role in the decisions by many economists to leave Israel, or to simply remain abroad, the non-competitiveness of the country's universities and the subsequent promotion rigidities and discrepancies have been an important factor as well. After all, there still continues to be competition from universities abroad and many of Israel's economists have voted with their feet. In an increasingly open

and integrated world, not only are goods and capital becoming more mobile. Academics are also learning to reap the benefits of free trade – especially those productive individuals who might otherwise wither in environments incapable of or unwilling to extract themselves from traditional non-competitive philosophies.

The advent of the internet, together with the freely available citation data in Google Scholar and the very accessible Harzing Publish and Perish software, makes it possible to shine many a bright spotlight into areas that were, until now, very difficult – and expensive – to observe. Just as no other examination of the type conducted here was ever carried out on Israel's economists before, the new age of low-cost transparency can enable similar examinations abroad that had been hitherto unfeasible.

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Appendix Table 1: **Ranking the Top Third of the 191 Academic Economists in Israeli Universities**

Total Citations, 2007

rank	cites	name	university-department	
1	16,225	Prof Elhanan Helpman	Tel-Aviv - Economics	emeritus
2	5,414	Prof Robert Aumann	Heb Univ - Math	emeritus
3	5,396	Prof Ariel Rubinstein	Tel-Aviv - Economics	
4	4,726	Prof Manuel Trajtenberg	Tel-Aviv - Economics	
5	3,905	Prof Alex Cukierman	Tel-Aviv - Economics	emeritus
6	3,406	Prof David Schmeidler	Tel-Aviv - Business, Math	
7	3,021	Prof Assaf Razin	Tel-Aviv - Economics	
8	1,980	Prof Itzhak Gilboa	Tel-Aviv - Economics	
9	1,923	Prof Shlomo Yitzhaki	Heb Univ - Economics	
10	1,771	Prof Ido Erev	Technion - Behavioral Sci	
11	1,680	Prof Yoram Weiss	Tel-Aviv - Economics	
12	1,609	Prof Sergiu Hart	Heb Univ - Econ, Math	
13	1,591	Prof. Menahem Yaari	Heb Univ - Economics	emeritus
14	1,501	Prof Moshe Tennenholtz	Technion - Ind Eng & Manag	
15	1,497	Prof Arye Hillman	Bar-Ilan - Economics	
16	1,492	Prof Leonardo Leiderman	Tel-Aviv - Economics	
17	1,468	Prof Chaim Fershtman	Tel-Aviv - Economics	
18	1,297	Prof Efraim Sadka	Tel-Aviv - Economics	
19	1,295	Prof Joseph Zeira	Heb Univ - Economics	
20	1,288	Prof Zvi Hercowitz	Tel-Aviv - Economics	
21	1,275	Prof. Bezalel Peleg	Heb Univ - Math	emeritus
22	1,273	Prof Saul Lach	Heb Univ - Economics	
23	1,243	Prof Israel Zang	Tel-Aviv - Bus School	emeritus
24	1,225	Prof Eugene Kandel	Heb Univ - Econ, Business	
25	1,221	Prof Victor Lavy	Heb Univ - Economics	
26	1,221	Prof Zvi Eckstein	Tel-Aviv - Economics	
27	1,207	Prof Oz Shy	Haifa - Economics	
28	1,176	Prof Shmuel Nitzan	Bar-Ilan - Economics	
29	1,169	Prof Yair Mundlak	Faculta - Agric Econ	emeritus
30	1,121	Prof Daniel Tsiddon	Tel-Aviv - Economics	
31	1,118	Dr Dan Ben-David	Tel-Aviv - Public Policy	
32	1,077	Prof. Eytan Sheshinski	Heb Univ - Economics	emeritus
33	1,042	Prof Eddie Dekel	Tel-Aviv - Economics	
34	1,035	Prof Neil Gandal	Tel-Aviv - Public Policy	
35	1,012	Prof. Reuben Gronau	Heb Univ - Economics	emeritus
36	907	Dr. Yishay Yafeh	Heb Univ - Bus School	
37	869	Prof. Dov Monderer	Technion - Econ-Fin	
38	787	Prof Dov Samet	Tel-Aviv - Bus School	
39	769	Prof Motty Perry	Heb Univ - Economics	
40	732	Prof Daniel Levy	Bar-Ilan - Economics	
41	729	Prof Omer Moav	Heb Univ - Economics	
42	722	Prof Ehud Lehrer	Tel-Aviv - Math	
43	703	Prof. David Levhari	Heb Univ - Economics	emeritus
44	694	Prof Itzhak Zilcha	Tel-Aviv - Economics	
45	622	Prof. Adrian Ziderman	Bar-Ilan - Economics	
46	597	Prof David Genesove	Heb Univ - Economics	
47	573	Prof Michael Maschler	Heb Univ - Math	emeritus
48	566	Prof Zvi Lerman	Faculta - Agric Econ	
49	561	Prof Mark Gradstein	BGU - Economics	
50	549	Prof Uriel Rothblum	Technion - Ind Eng & Manag	
51	543	Prof. Michael Michaely	Heb Univ - Economics	emeritus
52	524	Prof. Giora Hanoch	Heb Univ - Economics	emeritus
53	517	Prof. Jacob Paroush	Bar-Ilan - Economics	
54	497	Prof Jacques Silber	Bar-Ilan - Economics	
55	497	Prof Jacob Glazer	Tel-Aviv - Bus School	
56	480	Prof Avishay Braverman	BGU - Economics	
57	464	Prof. Abraham Neyman	Heb Univ - Math	
58	453	Prof Eyal Winter	Heb Univ - Economics	
59	451	Prof Zvi Safra	Tel-Aviv - Bus School	emeritus
60	440	Prof Morris Teubal	Heb Univ - Economics	
61	433	Prof Yair Tauman	Tel-Aviv - Bus School	
62	405	Prof Avia Spivak	BGU - Economics	
63	396	Prof. Nissan Liviatan	Heb Univ - Economics	emeritus
64	383	Prof David Pines	Tel-Aviv - Economics	emeritus

Appendix Table 2

Ranking Departments by Total Cites, 2007*

Rank		Number of academic positions**		Total Citations	
	Entire country***	140.0	(181.8)	69,946	(109,465)
1	Economics – Tel-Aviv University	18.0	(26.0)	27,278	(47,867)
2	Economics – Hebrew University	21.0	(36.0)	11,956	(18,535)
3	Economics – Bar-Ilan University	29.0	(33.8)	6,649	(7,659)
4	Industrial Engineering and Management – Technion	8.0		4,998	
5	Management – Tel-Aviv University	7.5	(9.5)	4,058	(5,752)
6	Economics – Ben-Gurion University	25.0	(28.0)	4,057	(4,509)
7	Economics – Haifa University	17.0	(19.0)	3,220	(3,502)
8	Mathematics – Tel-Aviv University	2.5		2,612	
9	Public Policy – Tel-Aviv University	3.0		2,296	
10	Agricultural Economics – Hebrew University	7.5	(11.5)	1,554	(3,205)
11	Mathematics – Hebrew University	1.5	(4.5)	1,269	(8,531)

* The numbers in parentheses include emeritus faculty.

** Total number of positions in each department.

*** Only departments with more than two economists

Appendix Table 3

Ranking Departments by Cites Per Faculty Member, 2007*

Rank		Number of academic positions**		Total Citations	
	Entire country***	140.0	(181.8)	500	(602)
1	Economics – Tel-Aviv University	18.0	(26.0)	1,515	(1,841)
2	Mathematics – Tel-Aviv University	2.5		1,045	
3	Mathematics – Hebrew University	1.5	(4.5)	846	(1,896)
4	Public Policy – Tel-Aviv University	3.0		765	
5	Industrial Engineering and Management – Technion	8.0		625	
6	Economics – Hebrew University	21.0	(36.0)	569	(515)
7	Management – Tel-Aviv University	7.5	(9.5)	541	(605)
8	Economics – Bar-Ilan University	29.0	(33.8)	229	(227)
9	Agricultural Economics – Hebrew University	7.5	(11.5)	207	(279)
10	Economics – Haifa University	17.0	(19.0)	189	(184)
11	Economics – Ben-Gurion University	25.0	(28.0)	162	(161)

* The numbers in parentheses include emeritus faculty.

** Total number of positions in each department.

**** Only departments with more than two economists